

postanal scales well developed; gular pouch rather small, probably not very extensible; a transverse fold across throat, and two others in front of shoulder; hind limb reaches to front of eye; fore limb reaches three-fourths the distance to groin.

*Dimensions*.—Total length, 174 mm.; tip of snout to vent, 46 mm.; vent to tip of tail, 128 mm.; tip of snout to ear, 16 mm.; tip of snout to center of eye, 10 mm.; width of head, 8 mm.; fore leg, 17 mm.; hind leg, 36 mm.; tibia, 12 mm.; anterior border of nostril to tip of snout, 1 mm.

*Coloration* (in alcohol).—Top of head and neck drab; a dark lateral streak from rostral, turning to purple behind eye and suddenly narrowing above the shoulder to a black line continuing to groin; the nuchal region between these dark streaks marbled with dark bluish-gray to the shoulders, where the marblings suddenly cease, leaving the back and tail a uniform unspotted gray; below the dark lateral streak a sharply-defined white stripe beginning on upper lip below eye and continuing backwards to hind leg, bordered beneath from axilla to groin by a narrow dark line, the lower edge of which is produced into dark grayish-blue marblings, in which are anastomosing white spots; ventral surface pale blue; the lower labials white, flecked with light gray marblings; limbs pale and unspotted, with dusky bands across the digits above.

The new species apparently belongs to the same group as the Cuban *Anolis alutaceus* Cope, but it can be immediately distinguished from *A. alutaceus* by its much longer snout and its distinctive coloration. A long-snouted species from Navassa, *A. longiceps* Schmidt, may be related to *A. hendersoni*. The distance of the nostril from the tip of the snout is one-fifth the headlength in *A. longiceps*, and one-sixteenth the headlength in *A. hendersoni*, and so there is no possibility of confusing the two. The new species is named after the late J. B. Henderson, in recognition of the invaluable services he rendered to science during an all-too-short career. It is fitting that this exceptionally handsome *Anolis*, conspicuous even in a genus of unusual daintiness and beauty, should perpetuate his name in the region which he loved to explore.

#### ORNITHOLOGY.—*Descriptions of New East Indian Nectariniidae.*

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Study of the collection of East Indian sunbirds in the United States National Museum has brought to light a number of new forms. These are described in the following pages.

Measurements are all given in millimeters, and have been taken as in the author's previous papers. The names of colors are based on Ridgway's *Color standards and color nomenclature*.

#### *Arachnothera affinis heliophilus*, subsp. nov.

*Subspecific characters*.—Similar to *Arachnothera affinis affinis* from Java, but smaller; upper surface more greenish (less yellowish); and the anterior lower parts less distinctly streaked.

*Description*.—Type, adult male, No. 179384, U. S. Nat. Mus.; Loh Sidoh Bay, northwestern Sumatra, November 6, 1901; Dr. W. L. Abbott. Upper parts yellowish citrine; tail fuscous black, the basal three-fourths of middle rectrices and the basal two-thirds of remaining feathers, yellowish dark citrine, and subterminal spots on four outer rectrices creamy white; wings fuscous, edged with yellowish citrine; lores, sides of head and of neck, like the back, but the auriculars somewhat grayish; lower parts between light olive gray and light grayish olive, streaked with fuscous, and on the medial posterior portion with olive buff, but the middle of the abdomen plain olive buff; crissum citrine drab, the feathers tipped with olive buff to deep olive buff; lining of wing pale brownish, outwardly mixed with fuscous and colonial buff; axillars olive buff.

*Measurements of type*.—Wing 81 mm.; tail, 48; exposed culmen, 33; tarsus, 18; middle toe without claw, 12.

While this new race is intermediate between *Arachnothera affinis affinis* of Java and *Arachnothera affinis modesta* of the Malay Peninsula, it is different enough from both to be separately recognized. It may be distinguished from the latter by its smaller size, darker upper surface, and rather darker lower parts. It is the form inhabiting most if not all of Sumatra.

***Arachnothera chrysogenys astilpna*, subsp. nov.**

*Subspecific characters*.—Similar to *Arachnothera chrysogenys chrysogenys*, from eastern Sumatra, but upper parts darker, duller, and less yellowish (more grayish); lower surface rather darker.

*Description*.—Type, adult male, No. 173289, U. S. Nat. Mus.; Bok Pyin, Tenasserim, February 14, 1900; Dr. W. L. Abbott. Upper parts olive citrine; tail dark citrine, the shafts of the feathers fuscous; wings fuscous, with edgings of citrine and dark citrine; the inner lesser coverts olive citrine; supra-ocular streak and auricular patch, lemon chrome; remaining portions of sides of head and of neck like the back in color; anterior lower parts warbler green, but streaked with the grayish of the base of the feathers, which in places shows through; sides and flanks olive yellow; the middle of abdomen and middle of lower breast, wax yellow; crissum similar, but inclining a little to citrine; lining of wing light fuscous, washed with straw yellow; "feet fleshy brown; bill dark horn brown, yellow along commissure."

*Measurements of type*.—Wing, 81 mm.; tail, 39.5; exposed culmen, 36.5; tarsus, 19; middle toe without claw, 13.

This race occupies apparently all of the Malay Peninsula.

***Arachnothera longirostris antelia*, subsp. nov.**

*Subspecific characters*.—Similar to *Arachnothera longirostris longirostris*, from Burma, but upper surface duller, less golden (more greenish), and rather darker; yellow of posterior lower parts lighter, brighter, and more greenish.

*Description*.—Type, adult male, No. 169920, U. S. Nat. Mus.; Trang, Lower Siam, January 1, 1899; Dr. W. L. Abbott. Upper parts rather dark citrine, the centers of the feathers on the pileum fuscous, their edgings dark citrine; tail dark fuscous, edged with dark citrine, and tipped (except on the middle pair of rectrices) with brownish white, most broadly on the outer feathers; wings fuscous, the quills edged with citrine; coverts margined with the color of the back; lores and subocular streak, brownish white;

auriculars mouse gray; sides of neck like the back; chin and throat rather light smoke gray; breast and abdomen, dull strontian yellow, washed with yellowish citrine except on the middle of the abdomen; crissum dull barium yellow; lining of wing white, the axillars washed with barium yellow.

*Measurements of type.*—Wing, 66 mm.; tail 44.5; exposed culmen, 36.5; height of bill at base, 5; tarsus, 15; middle toe without claw, 10.

This race extends geographically from southern Tenasserim to the southern end of the Malay Peninsula. It differs from *Arachnothera longirostris melanchima* of eastern Sumatra in its lighter, more yellowish (less greenish) upper parts, and in the more golden hue of the yellow of the under surface.

***Arachnothera longirostris heliocrita*, subsp. nov.**

*Subspecific characters.*—Resembling *Arachnothera longirostris antelia*, from the Malay Peninsula, but with bill smaller; upper parts darker, duller, more grayish or brownish, the olive green areas more greenish (less yellowish) in tone; and yellow of posterior lower parts slightly lighter and somewhat less extensive.

*Type.*—Adult male, No. 170469, U. S. Nat. Mus.; Selitar, 9 miles from the town of Singapore, Singapore Island, Federated Malay States, May 17, 1899; Dr. W. L. Abbott.

*Measurements of type.*—Wing, 67 mm.; tail, 44.5; exposed culmen, 32.5; height of bill at base, 5; tarsus, 16; middle toe without claw, 10.

This race has been noted only on the island of Singapore. It may be distinguished from *Arachnothera longirostris melanchima*, of eastern Sumatra, by its shorter bill; duller, less greenish (more grayish or brownish) upper parts; and the somewhat paler, more golden (less greenish) tint of the yellow of the posterior lower surface.

***Anthreptes malacensis heliolusius*, subsp. nov.**

*Subspecific characters.*—Similar to *Anthreptes malacensis wiglesworthi*, from Sulu Island, but much larger.

*Description.*—Type, adult male, No. 201279, U. S. Nat. Mus.; Basilan Island, Philippine Islands, January 31, 1906; Dr. E. A. Mearns. Pileum, cervix, back, and sides of neck, iridescent metallic bottle green with some purplish reflections; rump and upper tail-coverts, metallic royal purple; tail fuscous black, the middle feathers more blackish, and with metallic purple sheen, all the rectrices edged with metallic purple and metallic bottle green; wings fuscous black, with the quills edged with orange citrine; middle coverts, edges of greater coverts, and the scapulars, chestnut; lesser coverts metallic royal purple; sides of head citrine, the upper part of these narrowly burnt sienna; chin, throat, and jugulum, tawny, bordered laterally with burnt sienna; breast deep wax yellow; abdomen light dull strontian yellow; crissum olive yellow; sides and flanks, light yellowish olive; lining of wing pale grayish brown, washed with citrine.

*Measurements of type.*—Wing, 68 mm.; tail, 44; exposed culmen, 16; tarsus, 17; middle toe without claw, 10.5.

This form is intermediate between *Anthreptes malacensis wiglesworthi* and *Anthreptes malacensis chlorigaster*. The female is similar to the female of *Anthreptes malacensis bornensis* Riley, but is of a darker, more bronzy green above, and is much duller, more olivaceous below.



***Anthreptes malacensis heliocalus*, subsp. nov.**

*Subspecific characters*.—Similar to *Anthreptes malacensis heliolusius*, from Basilan Island, but tail and exposed culmen longer; male somewhat brighter and of a more golden yellowish below; female less bronzy above, particularly on rump, and with the golden yellow of the middle of abdomen brighter.

*Type*.—Adult male, No. 113786, U. S. Nat. Mus.; Great Sanghir Island, Sanghir Islands, June 30, 1886; Dr. Platen.

*Measurements of type*.—Wing, 71 mm.; tail, 48; exposed culmen, 18; tarsus, 17.5; middle toe without claw, 11.

***Anthreptes simplex simplicior*, subsp. nov.**

*Subspecific characters*.—Similar to *Anthreptes simplex simplex*, from Sumatra, but with lower parts, particularly the breast, sides, and flanks, much paler, more grayish (less greenish); and upper surface less golden (more greenish).

*Description*.—Type, adult male, No. 178268, U. S. Nat. Mus.; Central Borneo, 1899; Dr. A. W. Nieuwenhuis; original number 596. Forehead metallic dark green; upper parts dark citrine, slightly washed on the occiput with dark gray; tail citrine, duller terminally, the shafts of the feathers fuscous; wings fuscous, the edgings of the quills citrine, their superior coverts edged with dark citrine; auriculars mouse gray; sides of neck like the back; chin and throat buffy grayish white; rest of the lower parts light grayish olive, washed with dull yellowish, except the middle of the abdomen and the crissum, which are dull grayish reed yellow; lining of wing brownish white, the edge of wing more brownish and mixed with the color of the crissum.

*Measurements of type*.—Wing, 63 mm.; tail, 52; exposed culmen, 14; tarsus, 14.5; middle toe without claw, 9.

This well-differentiated race is apparently confined to Borneo.

***Chalcostetha calcostetha heliomarpta*, subsp. nov.**

*Subspecific characters*.—Similar to *Chalcostetha calcostetha calcostetha*,<sup>1</sup> from Java, but with bill averaging longer; in the female, with upper parts, throat, jugulum, and abdomen paler, and whitish tips on the rectrices larger.

*Description*.—Type, adult female, No. 179390, U. S. Nat. Mus.; Simalur Island, western Sumatra, December 1, 1901; Dr. W. L. Abbott. Pileum between neutral gray and mouse gray; remainder of upper parts rather greenish deep olive, the middle portion of the upper tail-coverts dark brown; tail brownish black, the middle feathers and the outer webs of the others with a metallic bluish green sheen, and all but the middle pair broadly tipped with white; wings fuscous, their quills and coverts, excepting the lesser series, edged externally with citrine, the lesser coverts with the green of the back; sides of head brownish gray; sides of neck like the back; chin and throat brownish white; jugulum olive buff, washed with yellowish; middle of breast, together with the upper abdomen, between wax yellow and citrine yellow; lower abdomen primrose yellow; sides and flanks, dull olive buff, washed with pale yellow; crissum grayish white, washed slightly with pale yellow; lining of wing white, washed with pale yellow; edge of wing pale colonial buff.

<sup>1</sup> *N[ectarinia]. calcostetha* Jardine, Nat. Hist. Nectariniadae, 1843, p. 263 ("E. Ind. Islands.") Since this, the earliest name for this species, the *Chalcostetha insignis* of most authors, has not, in "E. Ind. Islands," a type locality definite enough for modern nomenclatural purposes, we designate Java as the type locality.

*Measurements of type*.—Wing, 57.5 mm.; tail, 45.5; exposed culmen, 19; tarsus, 14.5; middle toe without claw, 10.

So far as known, this race is confined to the island of Simalur. It is distinguishable from *Chalcostetha calcostetha pagicola* by its somewhat larger size, and, in the female, by lighter throat and darker abdomen.

***Cinnyris ornata heliobleta*, subsp. nov.**

*Subspecific characters*.—Similar to *Cinnyris ornata*<sup>2</sup> *microleuca* from Pulo Taya, off southeastern Sumatra, but somewhat smaller; the male with upper surface darker, more greenish (less golden); yellow of posterior lower surface paler, more greenish (less golden), and flanks more greenish; the female above less golden in hue, and below paler, less golden, posteriorly.

*Description*.—Type, adult male, No. 175122, U. S. Nat. Mus.; Tanjong Dungun, Trengganu, Federated Malay States, September 21, 1900; Dr. W. L. Abbott. Upper parts dark citrine; tail brownish black, the three outer rectrices tipped with dull white, most broadly on the outermost; wings fuscous, the quills and all the coverts, except the primary series, narrowly margined externally with dark citrine; lores of the same color as the crown; center of chin, of throat, and of jugulum, raisin black; sides of chin, of throat, and of jugulum, together with the anterior part of the cheeks, metallic indigo blue; remainder of the sides of head, and the sides of neck, dark citrine; a narrow, somewhat broken, line across the breast at the posterior edge of the raisin black jugulum, prouts brown; pectoral tufts cadmium yellow; breast and abdomen, strontian yellow, the crissum paler; sides and flanks, wax yellow, washed with olivaceous; lining of wing white, washed with barium yellow; bill and feet black.

*Measurements of type*.—Wing, 51 mm.; tail, 35; exposed culmen, 17; tarsus, 13.5; middle toe without claw, 8.5.

***Cinnyris ornata proselia*, subsp. nov.**

*Subspecific characters*.—Resembling *Cinnyris ornata heliobleta*, from the Federated Malay States, but somewhat smaller; male with upper parts darker, more golden olive, and yellow of posterior lower parts darker, more golden; female darker, more golden (less grayish) above, and darker, more golden posteriorly below.

*Type*.—Adult male, No. 178889, U. S. Nat. Mus.; Car Nicobar Island, Nicobar Islands, January 21, 1901; Dr. W. L. Abbott.

*Measurements of type*.—Wing, 49 mm.; tail, 34.5; exposed culmen, 16.5; tarsus, 14.5; middle toe without claw, 8.5.

This form is apparently confined to the island of Car Nicobar. It differs from *Cinnyris ornata klossi* (Richmond), from the other Nicobar Islands, in its smaller size; also, in the male, in much less golden (more grayish) upper surface, and rather lighter posterior lower parts; and, in the female, in the less golden hue of the upper parts, and lighter, less golden tint of the yellow of the posterior lower surface. It is, of course, readily distinguishable from *Cinnyris ornata blanfordi* (Baker)<sup>3</sup> by its much smaller bill.

<sup>2</sup> For the change of the name of this species from *Cinnyris pectoralis* to *Cinnyris ornata*, cf. Oberholser, Smithsonian. Misc. Coll., LX, No. 7, October 26, 1912, p. 18, footnote.

<sup>3</sup> *Cyrtostomus pectoralis blanfordi* Baker, Bull. Brit. Ornith. Club, XLI, No. CCLVI, January 27, 1921, p. 71 ("Kondol Is., Nicobars").

Mention, in passing, might be made of the fact that *Cinnyris ornata klossi* Richmond<sup>4</sup> is apparently a recognizable race, differing in both sexes from *Cinnyris ornata heliobleta*, of the Malay Peninsula in more golden (less grayish) upper parts, and darker more golden lower surface.

***Cinnyris ornata heliomanis*, subsp. nov.**

*Subspecific characters*.—Similar to *Cinnyris ornata ornata*,<sup>5</sup> from Java, but in the male averaging more grayish (less golden) above, and slightly paler on posterior lower parts; in the female, with a more golden tinge to the olive of the upper surface, and with more deeply colored and more golden-hued posterior under surface.

*Type*.—Adult male, No. 182683, U. S. Nat. Mus.; Salintukan, eastern Borneo, March 13, 1913; H. C. Raven.

*Measurements of type*.—Wing, 48.5 mm.; tail, 32.5; exposed culmen, 16; tarsus, 13; middle toe without claw, 8.

***Cinnyris ornata heliozeteta*, subsp. nov.**

*Subspecific characters*.—Similar to *Cinnyris ornata heliomanis*, from Borneo, but much larger; in the male, with upper surface more golden (less greenish), and posterior lower parts of a deeper, more golden yellow.

*Type*.—Adult male, No. 180616, U. S. Nat. Mus.; Tanjong Rengsam, Banka Island, southeastern Sumatra, May 21, 1904; Dr. W. L. Abbott.

*Measurements of type*.—Wing, 55 mm.; tail, 37; exposed culmen, 17; tarsus, 13; middle toe without claw, 10.

***Aethopyga siparaja heliotis*, subsp. nov.**

*Subspecific characters*.—Similar to *Aethopyga siparaja cara*, from Tenasserim, but larger, and tail more greenish.

*Description*.—Type, adult male, No. 173263, U. S. Nat. Mus.; Domel Island, Mergui Archipelago, February 23, 1900; Dr. W. L. Abbott. Forehead and fore part of crown, metallic invisible green; lores black; sides of head and of neck, together with occiput, cervix, scapulars, upper back, and lesser wing-coverts, between carmine and nopal red; lower back brownish slate; rump between lemon chrome and light cadmium; upper tail-coverts metallic diamine green, the middle rectrices dull metallic purple, margined with metallic diamine green; rest of tail brownish black, margined externally with metallic purple; wings dark hair brown, the primaries, secondaries, greater and middle coverts, narrowly margined with dark citrine; chin, throat, and jugulum, between scarlet red and nopal red; a long submalar streak metallic prussian blue; posterior lower parts rather light neutral gray; middle of breast dark brownish, the flanks slightly washed with olivaceous; lining of wing dull white; edge of wing hair brown, slightly washed with dull red.

*Measurements of type*.—Wing, 55.5 mm.; tail, 48.5; exposed culmen, 16; tarsus, 14; middle toe without claw, 13.5.

***Aethopyga siparaja heliophiletica*, subsp. nov.**

*Subspecific characters*.—Similar to *Aethopyga siparaja siparaja*, from Sumatra, but larger; and with less extensively blackish posterior lower parts.

<sup>4</sup> Proc. U. S. Nat. Mus., XXV, September 17, 1902, p. 297 ("Great Nicobar" [Island, Nicobar Islands]).

<sup>5</sup> Type locality, Java.



*Type*.—Adult male, No. 179405, U. S. Nat. Mus.; Pulo Bangkaru, Banjak Islands, Barussan Islands, western Sumatra, January 18, 1902; Dr. W. L. Abbott.

*Measurements of type*.—Wing, 51.5 mm.; tail, 45; exposed culmen, 15.5; tarsus, 13.3; middle toe without claw, 13.3.

This race is sufficiently different from the four other subspecies found on the various islands of the Barussan chain to be worthy of recognition by name. From *Aethopyga siparaja niasensis*, of Nias Island, it may be distinguished as from *Aethopyga siparaja siparaja*; from *Aethopyga siparaja tinoptila*, of Simalur Island, by somewhat larger size, less extensively blackish, and less purely grayish (more olivaceous) posterior lower parts; and paler anterior upper and lower parts.

#### *Aethopyga siparaja heliogona*, subsp. nov.

*Subspecific characters*.—Similar to *Aethopyga siparaja eupogon* Cabanis, from Borneo, but smaller, and male with more extensively blackish, and less olivaceous (more purely grayish) posterior lower parts.

*Type*.—Adult male, No. 219086, U. S. Nat. Mus.; Depok, Java, March 29, 1909; William Palmer.

*Measurements of type*.—Wing, 49.5 mm.; tail, 41; exposed culmen, 14.5; tarsus, 13.5; middle toe without claw, 13.5.

With the addition of the above described races, the forms of *Aethopyga siparaja* now apparently recognizable are as follows:

1.—*Aethopyga siparaja siparaja* (Raffles). Sumatra to southern Malay Peninsula.

2.—*Aethopyga siparaja tinoptila* Oberholser. Pulo Siumat and Simalur Island, Barussan Islands, western Sumatra.

3.—*Aethopyga siparaja melanetra* Oberholser. Pulo Lasia and Pulo Babi, Barussan Islands.

4.—*Aethopyga siparaja heliophiletica* Oberholser. Banjak Islands, Barussan Islands.

5.—*Aethopyga siparaja niasensis* Hartert. Nias Island, Barussan Islands.

6.—*Aethopyga siparaja photina* Oberholser. Pagi Islands, Barussan Islands.

7.—*Aethopyga siparaja heliogona* Oberholser. Java.

8.—*Aethopyga siparaja eupogon* Cabanis. Borneo.

9.—*Aethopyga siparaja ochropyrrha* Oberholser. Anamba Islands.

10.—*Aethopyga siparaja lathamii* (Jardine).<sup>6</sup> Central Malay Peninsula, from about 10° north latitude to about 5° north latitude.

11.—*Aethopyga siparaja heliotis* Oberholser. Mergui Archipelago.

12.—*Aethopyga siparaja nicobarica* Hume. Nicobar Islands.

13.—*Aethopyga siparaja cara* Hume. Tenasserim and Siam.

14.—*Aethopyga siparaja viridicauda* Rothschild. Shan States.

15.—*Aethopyga siparaja andersoni* Oates. Burma.

16.—*Aethopyga siparaja seheriae* (Tickell). Bengal to Assam.

17.—*Aethopyga siparaja miles* (Hodgson). Nepal.

18.—*Aethopyga siparaja goalpariensis* (Royle). Northwestern Himalaya.

<sup>6</sup> *Nectarinia Lathamii* Jardine, Nat. Hist. Nectariniadae, 1843, p. 233 ("some part of Continental India"). This was described from a specimen the exact locality of which is unknown, but the characters fit the bird from the Central Malay Peninsula. We therefore designate the Malay Peninsula at 7° north latitude as the type locality.